

**CLAIMS**

1. Stride monitoring device, this device comprising a pair of shoes comprising first and second shoes, the first shoe (C1) comprising at least a magnetic mass (A1), the second shoe (C2) comprising at least measurement means to make at least one physical measurement, and electronic means (ET2) for processing of this physical measurement, this device being characterised in that the measurement means comprise at least one accelerometer (ACC2) and at least one magnetometer (MAG2) capable of outputting signals that can be processed to determine stride parameters.

2. Device according to claim 1, in which each of the first and second shoes (C1, C2) comprises at least one magnetic mass (A1, A2), measurement means for making at least one physical measurement, and electronic means (ET1, ET2) for processing this physical measurement, the measurement means comprising at least one accelerometer (ACC1, ACC2) and at least one magnetometer (MAG1, MAG2) capable of outputting signals that can be processed to determine the stride parameters.

3. Device according to any one of claims 1 and 2, in which the magnetic mass comprises at least one permanent magnet (A1, A2).

4. Device according to any one of claims 1 to 3, in which the measurement means comprise a plurality of accelerometers.

5        5. Device according to any one of claims 1 to 4, in which the measurement means include a plurality of magnetometers.

10       6. Device according to any one of claims 1 to 5, in which the electronic processing means (ET1, ET2) are provided with means (MTR1, MTR2) of transmitting a signal output by these electronic processing means.

15       7. Device according to claim 6, also comprising portable means (BCC) designed to receive the signal transmitted by the transmission means and to display data representative of this signal.

20       8. Device according to claim 7, in which the portable means comprise:

- data reception means (MTR),
- electronic means (UTD) for processing these data, these electronic data processing means being provided with a memory (MEM),
- 25       - control input means (COM), and
- display means (AFF).

9. Device according to claim 8, in which the memory (MEM) contains:

- a sequence to calibrate the signal transmitted by the transmission means (MTR), as a function of the stride length and intrinsic parameters of the shoes,

- a stride length estimating algorithm,

5       - an algorithm to calibrate the signal transmitted by the transmission means as a function of the parameters input by a user, and

- an algorithm to estimate the stride speed.

10       10. Device according to claim 9, in which the calibration sequence is designed firstly to determine a mathematical calibration law by means of a polynomial regression, and secondly to determine a direct  
15       correspondence between the measured signal and the stride length, for given shoes and a given individual.

11. Device according to any one of claims 9 and 10, in which the stride length estimating algorithm uses the measurement of the variation in the magnetic  
20       field resulting from the movement of the magnetic mass (A1, A2).